

# Network Simulation

## ABSTRACT OF THE DISCLOSURE

5           A simulation system and method that combines the advantages of both analytical modeling and discrete-event simulation is disclosed. In a preferred embodiment of this invention, traffic on the network is modeled as a combination of background-traffic and explicit-traffic. The background-traffic is primarily processed in an analytical form, except in the "time-vicinity" of an explicit-event. Explicit-events are processed using  
10   discrete-event simulation, and the modeled effects are dependent upon the background-traffic. At each occasion that the background-traffic may affect the explicit-traffic, the background-traffic is particularized into events that are modeled at the lower detail level of the explicit-traffic. In this manner, the portions of the network that are unaffected by the explicit-traffic and that have no effect on the explicit-traffic are modeled and  
15   processed at an analytical level, consuming minimal processing time and memory resources, while the portion of the network affected by the explicit-traffic and the background-traffic that affects the explicit-traffic are processed at the lower level of detail.

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